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BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268–0001

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| PERIODIC REPORTING (PROPOSAL THIRTEEN) | Docket No. RM2015-7 |

**REPLY COMMENTS OF THE UNITED STATES POSTAL SERVICE IN RESPONSE TO MARCH 18TH COMMENTS**
(May 13, 2015)

On March 18, 2015, in accordance with Order Nos. 2294 (December 18, 2014) and 2389 (March 11, 2015), initial comments were filed in this proceeding by Postcom, the Public Representative, and UPS.[1] Order No. 2455 (April 23, 2015) reset the date for Reply Comments in response to those initial comments to May 13, 2015.[2] The Postal Service hereby responds to the initial comments filed on March 18.

## Postcom

PostCom raises one concern and five questions for the Commission to consider. In this section, the Postal Service addresses the concern and the questions

First, PostCom raises the concern that the Postal Service did not provide a breakout of parcel and accountable delivery costs by product or type of package, and that there was no breakout showing the proportions of package delivery costs attributable to competitive products and to market dominant products. PostCom Comments at 1-2. There are several reasons, however, why this information does not appear in the portion of the filing that PostCom cites – the Report. First, the purpose of

[1] Earlier, on March 11, 2015, very brief comments were also filed by DMA, but they contained no substance to which any response is necessary.
[2] Order No. 2455 also established subsequent procedures for materials relating to supplementary analysis to be conducted by UPS beyond what was submitted on March 18. That analysis has yet to be submitted, and is thus naturally beyond the scope of these comments.

the study was to examine and improve the estimates of volume variability, which determine the level of attribution. In contrast, PostCom's concern focuses on how attributable costs are then distributed to products. Because the scope of the research did not extend to changes in distribution procedures, however, any effects on distribution to product were secondary. Moreover, information of the type that PostCom discusses was presented in the nonpublic portion of the filing. A version of that material is provided below, but (as PostCom admits is appropriate) with information for competitive products aggregated.

| | TOTAL C/S 6 & 7, REVISED FOR LETTER ROUTE STUDY, WITH PIGGYBACKS | TOTAL CS 6 & 7, AS FILED IN ACR 2013, WITH PIGGYBACKS | CHANGE REVISED CS 6 & 7, WITH FILED 6&7, WITH PIGGYBACKS | Percentage Change In Attributable Costs Due to Study |
|---|---|---|---|---|
| **Total Domestic Market Dominant Costs** | $8,774,173 | $9,122,581 | ($351,899) | -3.86% |
| **Total Domestic Competitive Costs** | $908,836 | $800,731 | $108,105 | 13.50% |

Next, PostCom notes that since the conclusion of the Package and Accountable Study, the Postal Service has introduced Sunday delivery and package-only routes. PostCom Comments at 2-3. It asks how these changes would be factored into the model for city carrier delivery costs and whether these changes will cause the analyzed costs to grow. In response, the Postal Service notes that Proposal Thirteen relates to city letter carriers. Letter carriers work on Mondays through Saturdays, and neither the initiation of Sunday delivery nor the growth in package routes has had any impact on that work schedule. Letter carrier work hours are generally classified as Labor Distribution Code (LDC) 21 (office) or 22 (street). Work hours incurred on Sundays and during package routes are part of LDC 23, the costs for which are assigned to products

by means of a different cost model. The Postal Service is currently investigating the feasibility of updating its cost model used to assign LDC 23 costs. An updated model would ensure the continued ability to accurately measure and account for Sunday hours and package routes.

PostCom also notes that package volumes have more than doubled since 2009 and wonders if there has been a corresponding increase in the amount of street time attributed to package products. PostCom Comments at 3. Because of economies of density in delivery, one would not expect the attributable costs of a product to rise as fast as the increase in volume. This is particularly true if much of the additional package volume growth is delivered to addresses that were already receiving packages. The Postal Service does note that the package delivery proportion of street time increased sharply in the current study (8.2 percent) from the previous study (5.6 percent).

PostCom claims that when comparing the total attributable costs cited in the 2013 study to the total attributable costs presented in the 2013 CRA, the CRA reports 1.1 percent fewer attributable costs than the study. PostCom wonders if these costs would be shifted to institutional. PostCom Comments at 3. The Postal Service responds, first, by noting that, in contrast to PostCom's claim, the study actually reports slightly lower attributable costs than the FY 2013 CRA, which uses the old variabilities, due to a slightly smaller overall variability. This is entirely consistent with a decline in delivered volumes. This change in variability would result in a small amount of costs being shifted to institutional costs.

PostCom observes that 32.6 percent of the routes in the study were in FSS zones, a higher percentage than the nationwide percentage of routes in FSS zones. It

argues that FSS zones are known to be in more affluent neighborhoods, and could receive more parcels then other ZIP Codes. PostCom asks if FSS routes are overrepresented in the study, and if so, how does this overrepresentation influence the results of the study? PostCom Comments at 3.

In response, the Postal Service notes that 27.7 percent of the ZIP Code days in the study include FSS mail, and FSS zones are not overrepresented in the study. FSS volumes are contained in a separate delivery bundle and, thus, are a potentially important cost driver of regular delivery time. As such, it was warranted to estimate a separate variability for FSS volumes and a substantial number of FSS zones were needed to estimate the variability accurately. The analysis was done at the ZIP Code level rather than the route level, and 84 FSS zones were selected for inclusion in the study. A complete discussion of the impact of the FSS variable on the regular delivery equation is provided in the City Carrier Street Time Report on pages 75-80.

Finally, PostCom argues that no major markets were represented in the study. It argues that Boston, New York, Philadelphia, Atlanta, Miami, Chicago, Dallas, Los Angeles and all of New England were excluded from the study. It wants to know why these markets are excluded. PostCom Comments at 3. The Postal Service is not clear how PostCom came to the conclusion that these major markets were not included in the study. In fact, all of the markets listed did participate in the study. The ZIP Codes filed in RM2015-7/1 are masked, so their values cannot be used to determine actual geographical location.

**Public Representative**

The Public Representative raises a number of issues in her discussion of

Proposal Thirteen. As explained below, however, none of these provide any valid basis to oppose adoption of the proposal.

**A. Concerns about the time period during which the package and accountable data were collected.**

The Public Representative argued that the Package and Accountable Study was conducted during postal quarter three (April – June), a time period when she says parcel volumes are lowest during the fiscal year. PR Comments at 6-8. To support this contention, she provided a graph with parcel volumes on the vertical axis and the postal quarters of FY 2014 on the horizontal axis. The graph provides, presumably, a single data point per quarter, with the data points connected to create the appearance of a line graph.

The minimum value on the graph, apparently represents total parcel volume in the third postal quarter of FY2014. The Public Representative, believing that this covered the time period chosen for the Package and Accountable Study, argued that this period cannot be representative of the average volume of parcels.

It appears that the Public Representative's concern arises from a misunderstanding of when the Package and Accountable study was actually done. Note that, unlike the Public Representative's claim, the Package and Accountable Study was not done in the third postal quarter of FY2014. The Collection Volume Study was done in postal quarter three of FY 2013, (Monday, April 29, 2013 through Saturday, May 11, 2013), but the Package and Accountable Study was conducted from Monday, March 25, 2014 through Saturday, April 7, 2014.[3] This puts the Package and Accountable

[3] On page 8 of her comments, the Public Representative states, "The Postal Service's selection of the April 29 through May 11, 2013 time period, likely understates the

Study at the nexus between the second and third postal quarters, and not at the trough of package volume as the Public Representative states.[4] Consequently, the study occurred neither at the peak of package volumes nor at the trough of package volumes. It is also important to keep in mind that calculating average package volume was not the goal of the Package and Accountable Study. Rather it was designed to measure the response in city carrier package and accountable delivery time caused by a change in package volume. The study thus required a series of cross-sectional observations from a period of time during which the fundamental cost generating process was not clouded by seasonal variations. In sum, the Public Representative's concern about the timing of the package study is misplaced.

**B. Concerns about the time dimension of the Package and Accountable Study data set.**

The Public Representative also expressed concern about the time dimension of the Postal Service's Package and Accountable Study data set. PR Comments at 7-8. Specifically, she expressed a concern that the two-week period used for the study does not include annual peaks and troughs in package volumes, and that it is too short to include seasonal variations. If the package and accountable data set were a pure time-series database, then the Public Representative's concerns might have merit. In reality, however, her concerns ignore the fact that the data set has a strong cross-sectional component.

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proportion of street time dedicated to package and accountable delivery" The dates cited by the Public Representative are for the collection mail study, not the package study.

[4] The second postal quarter runs from January through March and the third postal quarter runs from April through June.

The package and accountable dataset is a panel data set of approximately 300 ZIP Codes covering more than 6,000 city carrier letter routes. Consequently, it contains 12 repeated cross-sections on ZIP Codes that range from the very small (1 route) to the very large (over 40 routes). It is this variation across ZIP Codes that provides the variation alluded by the Public Representative when she refers to volume "peaks and troughs." In addition, the data set supports estimation of a pooled model of delivery time which, as the Commission has stated, combines both the cross-sectional and time-series variation:[5]

> The pooled model reflects the effects of the cross-sectional and the time dimension of the panel data in a neutral way.

The Public Representative's call to include seasonal variation in the data set is also unwise, from an econometric standpoint. Collecting a long time series of data that includes seasonal variations makes it more difficult to estimate the required variabilities. That is because the collected data then include both seasonal variations in hours as well as the tangible variations in hours caused by the variations of volume. A method of "de-seasonalizing" the data must be introduced into a time series model to account for the seasonality and that injects another source of econometric uncertainty. If the seasonal variation is not accounted for correctly, the estimated variabilities could be biased.

Finally, there is a practical issue to consider. The Public Representative seems to be ignoring that there is a real resource cost of collecting data. In the ideal situation, econometricians always want more data, but collecting data is expensive, so the costs

[5] Opinion and Recommended Decision, Docket No. R2005-1, at 74.

have to be considered. A two week study involving 300 ZIP Codes dispersed throughout the country involved a tremendous amount of administrative resources. Not only is carrier time taken up in the data collection effort, but Headquarters, Area, and local personnel are necessary to assist with the study. Given the administrative resources available, collecting data from 300 sites over a two-week period approached the upper bound of cost. Trying to collect similar data for a year is not feasible. The cost of such a study should not be considered solely within the framework of the administrative cost, as the carriers who participated in the study have a job to do. Their job is to deliver the mail in a safe and timely manner. The carriers are a resource for the Postal Service, and their focus is to deliver mail. There is thus a limit on the duration of carrier involvement.

**C. Concerns about the estimated time per study scan.**

In the package and accountable study, the elapsed time for each activity was measured as the difference between the initial scan and the terminal scan, so the elapsed time includes the time to perform the terminal scan. Consequently, the Postal Service adjusted the elapsed time to exclude the time to perform the terminal scan. The Public Representative indicated that adjusting the elapsed time to account for the time to perform the terminal scan was reasonable, but she questioned the Postal Service's methodology for calculating the average time per study scan and the result of 12 seconds per study scan. PR Comments at 8-12. The Public Representative advocated using the estimated time for city carriers performing a delivery confirmation scan of 6.23 seconds. The Public Representative was also concerned that the Postal Service used

the unadjusted total delivery time to form the parcel/accountable cost pools.

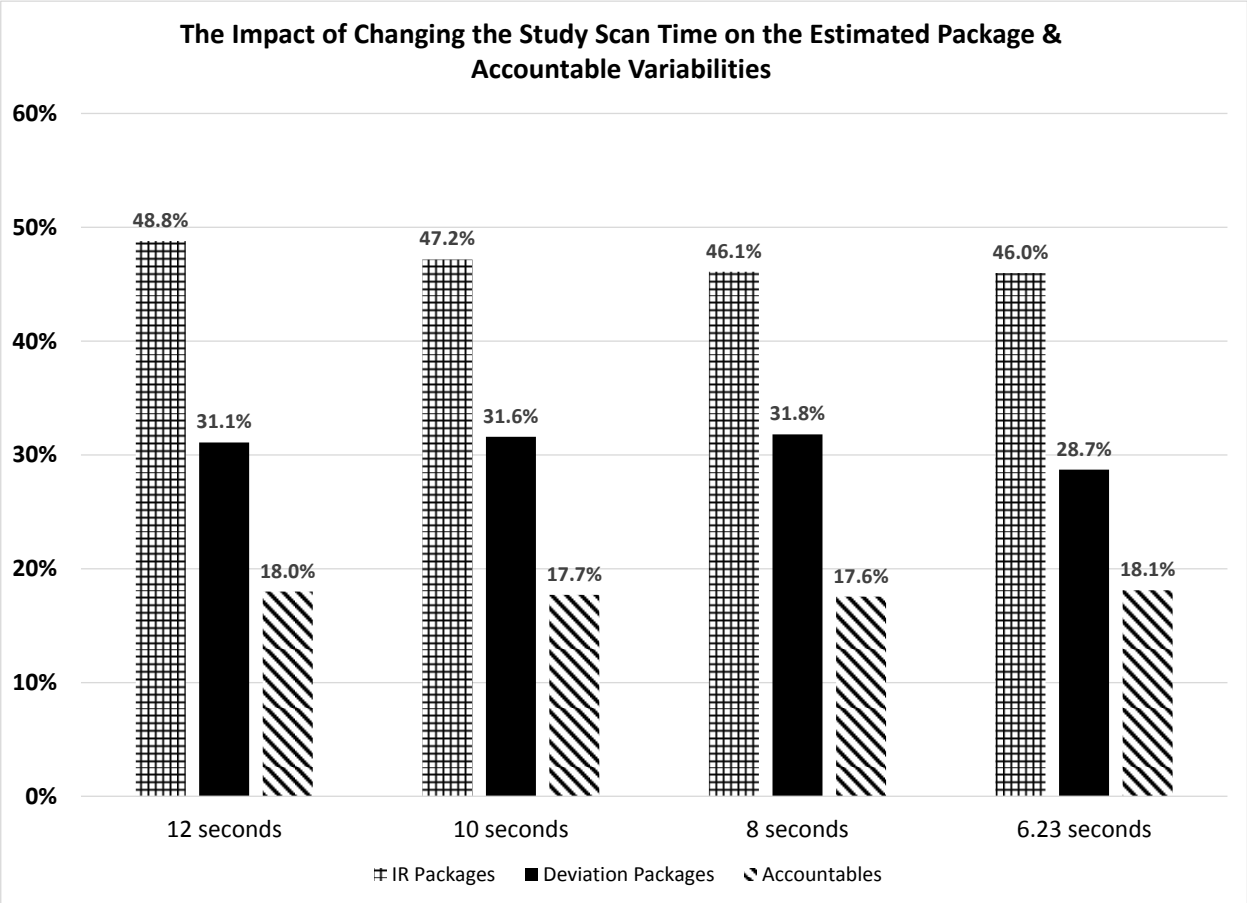
The Postal Service acknowledges that the method used to measure the time required to perform the terminal scan may not be perfect, but notes that without physical observation, the study scan time is virtually impossible to measure accurately. Resource constraints precluded the possibility of obtaining sufficient physical observations to produce a reliable measure. Thus an estimate of the study scan time must be used.

The Public Representative advocated using the time estimated for a city carrier to scan delivery confirmation (USPS Tracking) barcodes. This time comes from several engineering analyses initially developed in Docket No. R97-1 and later refined in Docket No. R2000-1. In those studies, the final base scan time for all physical motions associated with retrieving, positioning, using, and returning the scanner was 12.46 seconds. In witness Davis' rebuttal testimony (USPS-RT-23) in Docket No. R2000-1 this scan time was reduced by fifty percent, under the assumption that half of the base scan time was absorbed by other carrier activities. Davis at 4. Dividing the base scan time of 12.46 seconds by two resulted in the currently used scan time of 6.23 seconds. Thus, the delivery confirmation scan time is based on a crude assumption (the 50 percent reduction) and the full base scan time from that study is quite close to the average study scan time calculated during the package and accountable study.

In assessing the Public Representative's suggestion, it is useful to closely review the two estimates of scanning time. It seems reasonable that it would take longer for a carrier to perform a study scan than a delivery confirmation scan despite the Public Representative's belief that the scan times should be the same since "carriers used the

same scanners for the study that they use regularly on their routes." PR Comments at 10. The Public Representative claimed that familiarity with the scanning device should have made it unlikely that the time needed to perform a study scan should was longer than for a delivery scan. But she seems unaware that the scan activity that the carriers performed involved far more than the activity required for a delivery scan.

For the study scan, the carrier had to retrieve the laminated card that had the study barcodes, identify the type of activity being performed, locate the correct barcode on the laminated card, scan the barcode, hit the "Enter" key, and finally hit the hot key, "A". It is also reasonable to conclude that a study scan took longer than a delivery scan and that the Public Representative's suggestion to cut the scan time in half is too extreme. As the next chart shows, if the study scan time is reduced by less extreme proportions, the impact on the estimated variabilities is mitigated substantially. In the chart, the variabilities associated with study scan times of 10 seconds and 8 seconds are included along with the variabilities associated with 12 seconds and 6.23 seconds.




In sum, the Postal Service believes that the delivery confirmation scan time of 6.23 seconds is not applicable due to the complexity of conducting the study scans and the extra steps the carriers had to perform. The additional complexity leads the Postal Service to conclude that the scan time is much closer to 12 seconds than to 6.23 seconds, and therefore that 12 seconds is the best available estimate of the time to perform a terminal scan.

The Public Representative also pointed out the Postal Service did not originally adjust the elapsed time used for cost pool formation for the terminal scan. The Postal Service shares this concern and filed adjusted cost pool proportions in response to Question 1 of Chairman's Information Request No. 3, on March 17, 2015. The table

below was filed with the response and shows the small impact the error had on the parcel/accountable cost pool proportions.

| | Proportions With Scan Time Included | Proportions With Scan Time Excluded | Difference |
|---|---|---|---|
| In Receptacle | 0.038 | 0.030 | -0.009 |
| Deviation Package and Accountable | 0.047 | 0.042 | -0.005 |

**D. Concerns about the relationship between in-receptacle and deviation packages.**

During the package and accountable study, the Postal Service had carriers separately identify those packages that were too large to case but could fit into the receptacle with other mail, and those packages that were both too large to case and could not fit into the receptacle with other mail.[6] This determination was made by the carrier for each individual package delivery and was not linked, per se, to the physical size of the package. This is because, as the PR notes on page 13 of her comments, the presence of other mail could cause a given sized package to be a deviation package one day and an in-receptacle package another day.

In contrast, the Public Representative asserted that the "Postal Service mistakenly assumes that there are two types of parcels, small parcels and large

[6] As explained in the Report on City Carrier Street Time, (at page 85), packages that are handled like flats in the office and cased along with residual letters and flats are also handled like cased flats on the street. In other words, these pieces are handled just like the other pieces of cased mail and thus are included in the cased mail bundle in the regular delivery equation.

parcels" (PR Comments at 12), presumably based upon their relative sizes. The Public Representative then argued that, instead, there are *three* types of packages -- "large" packages that require a deviation, "small" packages that fit into the receptacle, and "small" packages that also require the carrier to perform a deviation. As result, the Public Representative suggested that the Postal Services "binary" classification of packages fails to capture this distinction between in-receptacle packages and deviation packages. She also speculates that this "binary" approach may have caused the Postal Service to identity some deviation packages as in-receptacle packages

These concerns are based upon a misunderstanding of the Postal Service's data collection process. The Postal Service never attempted to determine the size of packages, but incorporated instructions that allowed for the fact that, on heavy mail days, otherwise "small" packages could cause a deviation. In fact, the data collection process was specifically designed to account for that possibility.

During the study, carriers were asked to identify and record delivered volume in three separate categories 1) in-receptacle packages, 2) deviation packages, and 3) accountables. The carriers were also asked to record information about certain types of collected volume, the number of Package Pickup Stops, On-Demand –Pickup (Paid) Stops, and the corresponding volumes by product collected. The carriers were instructed to use hard copy data collection forms as tally sheets (See Docket No. RM2015-7/1, Training_Data_Collection/Package_Accountable_Study_Exhibits/ Package_Accountable_Study_Exhibit_1.pdf at 2-3), and they took those tally sheets to the route with them. The tally sheets the carriers had with them during their street activities safeguarded against the Public Representative's concern that delivered

packages were misclassified during the study. When the carriers returned to the office, they finalized the delivered and collected volume counts, and then submitted them to the Local Coordinator to be entered in the WEBTOOL.

Given those instructions, the Public Representative's concerns regarding misclassification of packages are misguided. Each carrier knew how each package was delivered and thus could correctly record the nature of the package. The Postal Service intentionally avoided classifying packages by their physical dimensions to explicitly account for the Public Representative's concern that the amount of other mail for a delivery point could alter the way in which a package is delivered.

The Public Representative then attempted to simulate the effect of package misclassification on the estimated variabilities through the presentation of three illustrations in her Figure 3. Those illustrations apparently show sharp changes in the estimated variabilities when a small proportion of in-receptacle packages are reclassified as deviation packages. However, review of the scales of the vertical axes in those graphs shows that the variability changes are actually *de minimis.* The scales of those graphs were for only fractions of one percent. The following table presents the largest and smallest reported values from the three variability graphs in the Public Representatives' comments, along with the ranges covered between the high and low values. None of the ranges are as large as one-half of one percent.

Variations in Package Variabilities Reported by the Public Representative

| | Accountable | Deviation | In-Receptacle |
|---|---|---|---|
| Maximum Value | 18.0% | 31.3% | 49.0% |
| Minimum Value | 17.9% | 31.1% | 48.8% |
| Range | 0.1% | 0.2% | 0.2% |

Finally, the Public Representative's suggestion that future studies distinguish between parcel size and type of delivery is ill-advised as it would have carriers undergo the tedious and time-consuming process of measuring and recording each package's dimensions. Even if done accurately, such a process would not definitively indicate whether the package should properly be classified as in-receptacle or deviation as that would, as the Public Representative herself notes, ignore the possibility that parcels measured as sufficiently small to fit into a receptacle might not be handled so when the carrier was confronted with an unexpected volume of other mail for that delivery point

**E. Concerns about updating the study**

The Public Representative suggested that the Commission should require the Postal Service to update its City Carrier Street Time cost model, at a minimum, every five years. The Public Representative also recommended that the Postal Service conduct a new Package and Accountable Study to address her perceived flaws. PR Comments at 16

The Postal Service agrees that the Carrier Street Time model should be updated on a more frequent basis. One component of Proposal Thirteen is to use current Form

3999 data to construct the relevant cost pool proportions. If Proposal Thirteen is adopted by the Commission, the cost pool proportions could be updated annually rather than remain static as they have since the last study was conducted in 2002. Also, the deployment of Mobile Delivery Devices (MDD) with Global Positioning System (GPS) to carriers offers optimism that shortly expensive field studies will no longer need to be conducted to update the carrier street time model. It is worth noting however, that given the resources required for updating and litigating a new carrier study, the additional costs may exceed the additional benefits from performing this entire effort, including the necessary field studies, with the periodicity suggested by the Public Representative. Rather, it would be prudent to perform updates of the Form 3999 data on an annual basis and monitor changes to mail mix and to carrier practices on an ongoing basis to evaluate the need for such a large effort as this one.

The perceived flaws discussed by the Public Representative were based on various misunderstandings of what the Postal Service actually did, and are thus invalid. The Package and Accountable Study conducted in March/April 2014 had a sound design, large sample size, and realistic and intuitive results. For those reasons, the Commission should adopt Proposal Thirteen as the established cost model for street time for city letter carriers.

**United Parcel Service (UPS)**

On March 18, UPS submitted initial comments, supported by a Report of Kevin Neels on Behalf of United Parcel Service, attached as an exhibit to those comments. In response, the Postal Service is providing these reply comments, as well as an Analysis of the Report of Dr. Kevin Neels On Behalf of United Parcel Service, conducted and

submitted by Professor Michael D. Bradley of George Washington University. For convenience, that analysis (hereinafter referred to as the "Bradley Analysis") is appended to these Reply Comments electronically. In conjunction with the submission of the Bradley Analysis, the Postal Service is also submitting USPS-RM2015-7/3, which contains the documentation of materials supporting Prof. Bradley's work specifically in response to the March 18 submission of Dr. Neels.

The set of comments on Proposal Thirteen submitted by UPS on March 18 are an amalgam of points originally made in the report written by Dr. Kevin Neels, and points that apparently originate with UPS. As noted, the Postal Service asked Professor Michael Bradley to review Dr. Neels report and to determine if it contains any comments or suggestions useful for refining Proposal Thirteen. Professor Bradley's report is attached, but these reply comments address the set of points raised within the main text of the initial comments submitted by UPS.

The Postal Service developed Proposal Thirteen in an open, collaborative process. Over a number of years, the Postal Service has publically shared its research on essential issues relevant for updating the city carrier street time model, such as the appropriate use of operational databases, the need for specific and focused field studies, its development of a sample for those studies, and its approach to econometric estimation. The Postal Service did so to both inform parties of its plans and solicit feedback on methodology before significant resources were expended. From that effort, a consensus emerged on certain important issues:[7]

> In May, and again in August of 2012, the Commission sponsored technical conferences in this docket that

[7] See, Order No. 1626 (January 18, 2013), Docket No. RM2011-3 at 3.

investigated the feasibility of using data from databases compiled to manage city carrier operations to develop improved estimates of carrier street time cost pools and their volume variability. At the second technical conference, the Postal Service presented a "Scoping Study," which analyzed the feasibility of using several operational carrier databases to update and improve estimates of carrier street time variability. It also responded to questions from conference participants.[8]

The Scoping Study concluded that while the Carrier Optimal Routing (COR) data and the Managed Service Point (MSP) data would not be suitable data sources, the Form 3999 Dataset held potential for updating street time cost pools and that daily volumes from the Delivery Operations Information System (DOIS) held potential for estimating the independent variables needed in econometric models of street time variability.[9] [Footnotes in original.]

The following areas of consensus emerged from the Second Technical Conference:

- Further investigation is needed to determine whether it would be feasible to use DOIS, especially the quality of time data, to estimate econometric models of street time variability;
- A special study of deviation parcel, accountable, and possibly collection times and volumes would be needed to accurately determine time pool percentages and estimate econometric models of volume variability;
- Because bundles of different mail shapes have a significant impact on carrier street time costs, different types of bundle variables should be considered for inclusion in a volume variability model.

UPS apparently decided not to participate in the collaborative process at that

[8] Docket No. RM2011-3, Second Technical Conference, August 15, 2012.

[9] Docket No. RM2011-3, Scoping Study Report of the United States Postal Service, May 25, 2012.

time, but instead has now submitted hyperbolic comments that contribute little to improving the proposed methodology. The UPS comments are laden with both factual mistakes and unsupported assertions, which erode their usefulness. The UPS comments raise six issues of substance, each of which is analyzed and addressed in these reply comments. In no instance do the UPS' assertions have merit, and they provide nothing of value for revising the Proposal Thirteen methodology.

**Issue 1: Segregation of regular delivery time from P/A time leads to a "fragmented" model.**

UPS complains that the approach taken in Proposal Thirteen artificially segregates regular delivery time from parcel and accountable delivery time. (UPS Comments at 4, 9-13). It argues that this segregation is illegitimate, because it has no rational basis, is based upon flawed assumptions, provides a highly fragmented model of street time, and creates omitted variables bias in the regular delivery equation. *Id.* None of these apparent concerns are accurate, and in no instance does UPS present any evidence to support these assertions. In fact, this pattern is repeated throughout the UPS comments, as they attempt to cloud the issues by posing possible objections, but do not back those possible objections with concrete evidence or statistical tests.

For example, UPS claims that Proposal Thirteen model relies upon an assumption that the presence of parcels does not affect regular mail delivery. *Id.* at 10. Obviously, the Postal Service fully recognizes that the presence, absence, or quantity of parcels on a mail carrier's route impact carrier's *street* time. But a typical route delivers roughly 2,300 letters and flats across 600 delivery points as compared to 30 to 40 packages to approximately 30 delivery points. Thus, the delivery time for packages is

an order of magnitude smaller than the delivery time for letters and flats. In order to prevent the package delivery time from being overwhelmed by the regular delivery time, separate models of delivery time were constructed for in-receptacle packages, deviation packages and accountables.[10] (Street Time Report at 85.) By constructing separate models of delivery time, more accurate marginal times by cost driver are estimated.

That is, to ensure that package delivery time was appropriately accounted for, the Postal Service separately investigated the time associated with the delivery of packages, both those that fit in the receptacle, and those that require a deviation. Contrary to UPS implications, this effort lead to a much larger portion of a time associated with package delivery than was recorded in the Postal Services operational data base. (Street Time Report at 18).

In addition, the suggestion that the Postal Service model relies upon an assumption there is no street time, other than direct package delivery time, associated with packages is clearly false. Street support time (like driving to and from the route and relay time) is associated with packages and contributes to the overall attributable street time for that shape. The Postal Service does not assume that this general street time is not associated with packages. Rather, it is assumes that the time associated with directly delivering letters and flats is not caused by those packages that are delivered separately from letters and flats. This is not a new assumption. This was first proposed in Docket No. R2005-1 for deviation packages and accountables, and was accepted by the Commission.

[10] UPS appears to be asserting that the only street time attributed to packages is their delivery time. This is inaccurate, as packages also get their appropriate share of activity like driving to and from the route or stopping at relay boxes.

UPS attempts to buttress it assertion by citing statements by the Postal Service and mail carriers that confirm that the presence of parcels affects the delivery process. UPS Comments at 11-12. For example, it cites the fact the Postal Service has recently issued an RFP for new delivery vehicles with more capacity to better handle increased package volumes. The UPS statement that the presence of parcels affects the delivery process is obvious.[11] Proposal Thirteen confirms that the presence of parcels impacts the delivery process. In fact, because of the importance of parcels, the Postal Service designed and launched a comprehensive field study of parcel delivery. Unlike the UPS approach, which agglomerates all parcels into one variable, the Postal Service's detailed approach recognizes and incorporates the key fact that certain types of parcels take longer to deliver than others.[12]

Without providing any evidence or analysis, the UPS comments simply assert that the city carrier cost model used by the Commission, and updated in Proposal Thirteen, is too "fragmented." *Id.* at 10. But this concern is illegitimate, because the city carrier street time cost pools are actually concentrated, not fragmented. In fact, as Prof. Bradley points out, there are only four cost pools in the city carrier street time model for which variabilities need to be estimated: regular delivery, parcel and accountable delivery, collection from street letter boxes, and network travel time. Bradley Analysis at 28. Furthermore, these four cost pools account for 84 percent of city carrier street time,

[11] The emptiness of UPS' claim can be seen by simply substituting "roads" for parcels in its statements. It then becomes "The presence of roads also affects the delivery process." Like UPS's statement, this is true, but it does not affect the specification and estimation of the package and accountable delivery time models.

[12] In addition the UPS proposed model completely ignores accountables. It thus provides no mechanism for calculating their attributable costs.

and the remaining 16 percent of time uses the variabilities estimated for these four cost pools. In fact, Professor Bradley shows that once the direct time is accounted for, the breakout of city carrier street time cost pools is given as follows:

| | |
|---|---|
| Regular Delivery | 85.83% |
| PA Delivery | 10.74% |
| Collection from SLB | 0.22% |
| Network Travel | 3.21% |

In Proposal Thirteen, the Postal Service is providing new variabilities for 96.6 percent of carrier street time, and the "fragmentation" apparently concerning UPS relates to just 3.4 percent of street time.

The UPS comments also claim that not including a packages variable in the regular delivery equation subjects that equation to omitted variable bias, which causes the coefficients on the letter and flat volume cost drivers to be too large. *Id.* at 13. But typical of the UPS comments, an unsupported assertion is made, but no empirical evidence is provided In contrast, Professor Bradley actually tests for omitted variable bias, and his results conclusively demonstrate that there is no omitted variables bias in the regular delivery equation from not including package volume in that equation. Bradley Analysis at 13.

Professor Bradley's results also suggest that the estimated coefficients on the package variables in the regular delivery equation may be the result of spurious correlation, perhaps because of the serious measurement error in the measure of DOIS

packages. Bradley Analysis at 14. Finally, UPS' apparent angst about fragmentation notwithstanding, it makes very little difference if one estimates the letter and flat variabilities in a regular delivery equation or in an aggregate street time equation. Professor Bradley compares the variabilities from the Proposal Thirteen regular delivery time model with the results from Dr. Neels aggregate street time model and shows that the sum of the letter and flat variabilities are virtually identical in both models. Bradley Analysis at 30.

**Issue 2: The Quadratic Model it Too Complex**

UPS, echoing the report by Dr. Neels, argues that the quadratic model used by the Postal Service is "unnecessarily complex." UPS claims that this "complexity" creates econometric problems but cites only one such problem -- multicollinearity. Both UPS and Dr. Neels confuse complexity and aggregation and thus commit serious errors. It is well recognized among econometricians that the quadratic model is not complex. As Professor Bradley points out, the quadratic functional form is actually relatively simple, widely used and well known. Bradley Analysis at 15. Unlike Dr. Neels' truly complex nonlinear specification, the quadratic form has been described in textbooks, its properties are well explored, and it can be estimated with standard econometric methods.[13]

Moreover, UPS dramatically (and erroneously) overstates the one econometric problem it does cite, multicollinearity. First, contrary to UPS's claim, multicollinearity is a data problem, not a model specification problem. Second, the Postal Service fully

[13] As Professor Bradley points out, Dr. Neels' nonlinear model is apparently so complex that he was not able to compute and present the separate variabilities for parcel and non-parcel volumes. Bradley Analysis at 15.

investigated the presence of multicollinearity in the regular delivery equation. The statistical tests used and reported by the Postal Service determined that there was only modest, not severe, multicollinearity. This is reflected in the fact that only 7 of 34 estimated coefficients were statistically insignificant, as compared to 18 of 35 coefficients in the 2002 model. Street Time Report at 69. The Postal Service then removed these higher order terms, with little impact on the remaining terms. One benefit of this approach is that it preserves the model's ability to capture the effects of the remaining 26 right-hand side variables while continuing to produce unbiased estimates. The resulting model is statistically sound. Street Time Report at 73.

Professor Bradley further explains that the real issue is aggregation, not complexity. The reason there are many terms in the quadratic model is because there are many volume cost drivers in the model, not because the functional form is "complex." Professor Bradley then fully investigates the aggregation issue.[14] Unlike Dr. Neels, who reports marginal time tests for just some of the volume cost drivers, Professor Bradley investigates all pairs of volume cost drivers.[15] Bradley Analysis at 19.

When Dr. Neels' proposed test is appropriately applied, it indicates that two different aggregate variables should be included in the model, one for volumes with relatively low marginal times (DPS, Cased Mail and Sequenced) and one for volumes with relatively high marginal time volumes (FSS and Collection Mail).

[14] Professor Bradley also notes that this issue was first raised and analyzed by the Postal Service in the Scoping Study it submitted in 2012.

[15] Perhaps by luck, Dr. Neels reported results only for the 4 tests that do not reject the null hypothesis of equal marginal times. In contrast, all of the other 6 tests, that he did not report, do reject that hypothesis, meaning that it is wrong to aggregate the individual volumes into just one volume variable as he does.

Professor Bradley then estimates the properly specified aggregate volume model and computes the resulting variabilities. The following table presents the results along with the variabilities from the disaggregated model. The similarity in results demonstrates the robustness and confirms the statistical validity of the original model.

| | Disaggregated Model | Aggregated Model |
|---|---|---|
| DPS | 16.80% | 17.29% |
| Cased Mail | 7.00% | 5.33% |
| Sequenced | 3.40% | 2.77% |
| FSS | 3.00% | 3.35% |
| Collection | 5.40% | 5.56% |
| Sum | 35.60% | 34.30% |

**Issue 3: There are untested assumptions about other activities related to delivery time**

UPS claims that the Postal Service treats "some" activities as fixed, "without providing any analysis to support that classification." UPS Comments at 17. In fact, the Postal Service and the Commission treat only one activity as fixed, network travel time. That activity includes just 2.7 percent of city carrier street time in Proposal Thirteen. Moreover, the Postal Service did not provide explicit justification for this treatment because it is well established, widely recognized and long standing. The existence of

fixed travel time on letter carrier delivery routes is not a new idea.[16]

In a strange twist, the UPS comments oddly attempt to link this well-known characteristic of carrier street time to the identification of cost segment characteristics for the purpose of calculating incremental costs. UPS Comments at 17. This is wildly off base, because nothing in Proposal Thirteen is at all related to the calculation of incremental costs. UPS also apparently thinks that the identification of fixed travel time started in Docket No. R2006-1 with witness Pifer. *Id.* Again, this is spectacularly wrong. The identification of fixed travel time has been established by the Commission for at least 30 years, and has been evaluated and confirmed in many rate cases. In other words, network travel time and its predecessor "fixed route time" are an important characteristic of the Postal Service delivery network[17]

> City Carrier street time on letter routes is apportioned to its constituent functions in proportion to tallies gathered in the 1986 Street Time Survey (STS). One of those functions is runtime, defined as the time that it takes a carrier to travel between stops on his route. Under the established analysis, runtime is decomposed into "route time," defined as the time that a carrier requires to traverse his route without deviating from it to access delivery points, and "access time," defined as the time that a carrier spends deviating from his route to access delivery points. Regression analysis is used to identify the portion of runtime that varies with the number of stops covered. That portion is then multiplied by the volume variability of stops to estimate volume variable access time. The portion of runtime that does not vary with the number of stops accessed is regarded as fixed route time, which is an institutional cost.

This characteristic of the delivery network is also known by researchers outside of

[16] For example, the Rural Carrier compensation system provides a separate, non-volume related time for traversing the route.
[17] See, Opinion and Recommended Decision, Docket No. R97-1 at 158.

Commission proceedings:[18]

> Since route time is essentially fixed, it would double with two firms providing service, each with half the volume.

Similarly, UPS balks at the Postal Service applying the established procedure for handling indirectly attributable costs. As with network travel time, UPS acts as if this treatment is brand new, and has not been vetted in many rate cases over several decades. This delivery support time includes activities like driving from the office to the first stop on the route, and driving from the last stop on the route back to the office, breaks, and the time spent on relays. These activities are fixed with respect to volume on individual routes on any given day, as they are performed regardless of the volume delivered on that day. However, they will vary as the number of routes varies and thus take on the overall variability of street time. This is reasonable, and much more practical, than the alternative which is to estimate a variability for each of these activities separately and UPS' suggestion to do so directly contradicts its alleged concern about "fragmentation" of city carrier time into many cost pools.

[18] See, Cohen, Robert, and Chu, Edward, "A Measure of Scale Economies for Postal Services," in Managing Change in the Postal and Delivery Industries, Crew, M, and Kleindorfer, P, (eds). Kluwer Academic Publishers, 1997 at 120

**Issue 4: Proposal Thirteen is affected with the same data quality issues as previous studies.**

UPS claims that Proposal Thirteen suffers from "significant data quality issues, including some of the same data quality issues the Commission raised during the last dockets addressing city carrier street time." UPS Comments at 19. It further argues that these alleged data problems are a reason "the Postal Service and the Commission should be pursuing alternative approaches that utilize higher quality data." *Ids.* at 21.

Typical of its approach thorough its comments, UPS simply asserts that the Postal Service field studies suffer from significant data quality issues, but fails to mention specific problems with the data. It is also apparently unaware of the many improvements and methods the Postal Service put into place which materially improved the quality of the data collected. In its attempt to whitewash the current studies, UPS ignores the fundamental differences between the two sets of studies. Contrary to the UPS claims of similarity, the current field studies are quite different from those performed for the 2002 CCSTS. For example, the street time proportions in the 2002 CCSTS were obtained from carrier self-recording their activities whereas the current study uses Form 3999 data, which UPS espouses. In the same vein, UPS ignores the fact that the dependent variable and all but one of the independent volume variables in the regular delivery equation are derived from ongoing operational datasets, not from special studies.

The only real similarity between the field studies conducted for Proposal Thirteen and the 2002 CCSTS is that both had carriers self-report volume and time information for parcel and accountable delivery. However, just because both studies had carriers

self-reporting this information does not equate to a valid conclusion that the field studies for Proposal Thirteen have "significant data quality issues." UPS reiterates concerns the Commission expressed with the 2002 CCSTS, but fails to acknowledge that the Postal Service was aware of the issues raised by the Commission and took the following steps to improve the quality of the data with these field studies:

- More than doubled the number of HQ Contacts to 12
- Each Area had an Area Coordinator
- Local Coordinator had individual email addresses
- Constructed a WEBTOOL to input volumes and transmit them to HQ
- Improved Training for Local Coordinators and Carriers

The combination of additional administrative personnel with the advent of individual email addresses for Local Coordinator's enabled each site to be contacted daily. The Area Coordinators were instructed to contact each site daily to 1) ensure the site was conducting the study and 2) review the data collected. HQ Contacts traveled to several sites and responded to inquiries quickly.

The WEBTOOL was vital to be able to swiftly determine missing data and enabled HQ to identify possible errors in data entry. Questions about the data were often answered within hours, whereas in 2002 a tedious process was conducted in which sites were contacted after the study was finished regarding possible data entry errors.

The training materials were improved for these current field studies. Local coordinators were able to beta test the WEBTOOL and changes were made for ease of use. Two of the HQ contacts were delivery experts who wrote and help conduct the training. This resulted in clearer instructions along with different scenarios that clearly

showed the carriers the proper procedures. Carriers also conducted a dry run of study scans before the package study, and, unlike in 2002, immediate feedback was provided and numerous carrier questions were answered *before* the study started.

The commitment of additional resources and the improved training resulted in considerable improvement in the analysis data set. The participation rate for both studies was over ninety percent and the proportion of error scans was below five percent, which was much less than the corresponding figure from the 2002 CCSTS. In addition, the collection volume study featured extremely high participation rates which produce a complete data set:[19]

> The study captured data for 72,178 of those route days. This means that the study captured data for 98.6 percent of the possible route days. A large portion of the missing route days occurred because a few ZIP Codes started the data collection process a day or two late. Fortunately, attrition was very low at the end of the study. During the last four days of the study there were only six ZIP Code days missing out of possible total of 1,188.

Moreover while the Commission did articulate a number of criticisms of the 2002 study and provided suggestions for improvement (which the Postal Service noted and applied), UPS conveniently ignores the Commission overall assessment, which is much different from what UPS suggests:[20]

> The Commission is gratified that the Postal Service has reviewed its approach to carrier street time variability analysis from the "ground up" and collected new data on carrier street time activity that are designed to support improved econometric modeling of that variability. It urges

[19] See, Report on City Carrier Street Time at 32.

[20] See, Opinion and Recommended Decision, Docket No. R2005-1 at 74.

> the Postal Service to continue its analytical work to improve the quality of the data gathered, and to explore additional econometric models that will yield more robust results.

UPS also argues, at page 19, that the Postal Service has not justified its sample size and that it is "by no means obvious that the Postal Services data sample was of sufficient size as it focused on only 6,100 routes out of over 140,000." This is entirely consistent with the UPS approach of "argument by innuendo," in which it provide no evidence that there is a problem with the sample size, but rather just casts aspersions.

In fact, the Postal Service has been publicly discussing its sample size section since 2013.[21] The field studies in Proposal Thirteen used a stratified systematic design in which the primary sampling unit was ZIP Code. The design employed six strata based on the number of letter routes in a ZIP as well as the predominant technology used to deliver the mail (walking or driving).[22] A stratified design is commonly used to reduce the sampling variance – i.e. repeated samples would have a smaller range of results. However, stratification by size is especially useful for econometric modeling because it assures variation *between* the aggregated data elements, in this case ZIP Code days. By selecting ZIPs with few, medium, and large numbers of routes the critical variables – regular delivery time volumes by cost driver would have to vary greatly across the sample. Variation between observations greatly improves the explanatory power of econometric models.

[21] See, "Report on Research Progress," Docket No RM2011-3, August 7, 2013 (available on the Daily Listings on August 13, 2013). See also Order No. 1829 (Sept. 5, 2013), Docket No. RM2011-3, at 3.

[22] See, Report on City Carrier Street Time at 27.

It is essential to recognize that Proposal Thirteen is not used to estimate mean values with a certain level of precision. Rather, it is used to produce a data set for estimating econometric models that measure the change in costs in response to changes in volumes of each cost driver. In this regard, the current sample more than doubles the number of observations (3,485 in Proposal Thirteen versus 1,545 in CCSTS) available for estimating those equations.[23]. The large increase in the number of observations in the analysis dataset resulted in a more robust model less susceptible to issues such as multicollinearity.

Finally, from a resource and administrative standpoint, a set of 300 ZIP Codes was the maximum sample size possible. It stretched the Postal Services resources available for such research. For example, during the study process, sites were contacted at least once daily regarding the study. Many were contacted numerous times to address questions regarding the data. UPS simply ignores the reality that the Postal Service is resource constrained, and that the sampling method was both effective and efficient.

Reflecting the same approach, UPS also claims, without providing any evidence, that the sample "may" reflect a significant seasonal bias. UPS Comments at 19. In making this argument, UPS uses the red herring **"**statistically representative sample of delivery days" in its desperate attempt to criticize the field studies. UPS offers no definition of what is a "statistically representative sample of delivery days," because no

[23] Id. at 68. Curiously, in this part of its comments UPS argues that the sample size might be too small, but in other parts it argues that the number of observations used to estimate the regular delivery equation should be reduced from 3,485 to 294. The alleged concerns of UPS regarding sample size thus appear to be applied very selectively.

such definition exists. UPS also includes the obvious point that parcels volumes increase in November and December.

But UPS again fails to understand that the purpose of the field studies was to obtain the data necessary for accurately estimating the variability of delivery time with respect to sustained changes in volume, which the proposed model does. Aside from being an administrative nightmare of attempting to collect data during the holiday rush, UPS ignores the fact that seasonal data often results in artificial variations that can lead to misleading results. To account for this, seasonal dummies or other methods of "de-seasonalizing" the data need to be incorporated to eliminate the false impacts of seasonal factors. A major benefit of the proposed model is that does not require seasonal dummy variables or other method of de-seasonalizing the data that would add unnecessary complexity. This is a good example of the fact that UPS repeatedly complains about the "unnecessary" complexity of the proposed model, but many of its proposals would lead to more, not less, complexity.

UPS suggests that study fatigue may explain the "drastically" lower participation rate in the package study than the collection study. *Id.* at 19. The Postal Service acknowledges that "study fatigue" may have been a factor in the modest decline of reporting routes in the package study.[24] However, UPS greatly exaggerates the level of "study fatigue" that occurred and it ignores the fact the participation in the collection volume study was nearly universal. It also fails to acknowledge the improvements that the Postal Service put into place in response to previously expressed Commission concerns.

[24] See, Report on City Carrier Street Time at 96.

In its Opinion and Recommended Decision in Docket No. R2005-1, the Commission expressed a concern regarding the attrition rate of the 2002 CCSTS[25]. In conducting the current studies, the Postal Service responded to the Commission's comments with several measures specifically intended to address attrition or "study fatigue". The Postal Service used twelve Headquarters contacts for these field studies which is more than double the five that were used in the 2002 study. Also, unlike the 2002 study, both of the current field studies had Area Coordinators that were responsible for ensuring that each site in its region had the necessary training and materials to conduct the study. This extra layer of management was vital to the very high participation rate achieved in both field studies, as the Area Coordinators' were able to contact each of their sites daily and quickly respond to any issues that arose.

Advances in technology also greatly contributed, in two ways, to the improved participation rate for these two field studies. First, every Local and Area Coordinator had their own email address for these studies which greatly improved the ability for real-time communication. In the 2002 study, many offices only had one or two email addresses which made eliciting responses from the local personnel in charge of implementing the study extremely difficult. Second, a WEBTOOL was used to record and transmit collection and package volumes to Headquarters in a timely manner. This was a significant improvement over the use of numerous spreadsheets or paper forms. Each Area Coordinator reviewed its site's entries in the WEBTOOL daily for accuracy and completeness. This review enabled data gaps and inquiries to be resolved quickly. In the 2002 study, each site either emailed or physically mailed their forms which made

[25] See Docket No. R2005-1, Opinion and Recommended Decision, Appendix I at 9.

it extremely difficult to address missing data or possible outliers in a timely fashion.

As a result of these efforts, the Postal Service saw its participation rate rise considerably while also seeing its attrition rate fall significantly as compared with the previous study, despite the fact that it covered roughly two times the number of ZIP Codes. The Collection Volume study had 297 of 300 selected ZIP Codes participate and only dropped 1.4 percent of the possible ZIP Code days. Report at 36. Also, the number of missing ZIP Codes was roughly at the same level throughout the study. Report at 33. Thus the attrition rate for the collection study was *de minimis*. In the package study, the number of ZIP Code days reporting volume and scan data ranged between 273 and 283 during the course of the study. Report at 95. The number of routes reporting declined slightly, not dramatically, over the course of the study. Report at 96. This attrition rate in the package study compares quite favorably with the attrition rate noted by the Commission in its R2005-1 Opinion and Recommended Decision.[26] The improvement was due to the Postal Service committing additional resources and the technological advances that occurred since 2002.

The participation rates for the collection and package field studies were roughly 99 and 91 percent respectively, which was outstanding. The decline for the package study was not dramatic as suggested by UPS but actually rather modest and is easily explained by the additional complexity of conducting the package study where carriers had to accurately count and scan study barcodes as compared to executing linear measurements in the collection study. The additional complexity made it more difficult for a site that was not initially trained properly to participate. As examples, one site had

[26] Ibid.

a local coordinator become ill as the training was about to be conducted, while another encountered an unexpected retirement of its Local Coordinator just as the study was about to commence. These two sites were not able to recover in time and thus did not participate in the package study.

UPS also claims that the Postal Service continued its practice of "scrubbing" the data to compensate for poor data quality (UPS Comments at 20) and mentions the Commission has criticized the Postal Service for this practice in the past. Contrary to UPS' contention, the Postal Service did not "scrub" the data to compensate for poor data quality. Rather, the Postal Service used standard imputation techniques to fill in the gaps for missing or incomplete data. The specific methods used are detailed throughout the Report. Due to the cost of collecting data, imputation is regularly used in sample surveys so that the maximum amount of data collected can be used for analysis. Imputation in sample surveys is as regular as the sunrise and the academic literature is filled with imputation techniques. In fact, UPS suggests that it is possible to impute the collection and accountable volumes for the entire population of ZIP Codes from the data collected in the field studies. UPS Comments at 26. UPS' argument is circular, as it criticizes the Postal Service for "scrubbing" the data to compensate for poor data quality, but now it wants to use that data to impute collection and accountable volumes for the entire population of ZIP Codes that have city routes.

Lastly, UPS (citing Dr. Neels' report) falsely claims that city carriers were asked to modify their normal practices in order to complete the study, introducing an "obvious" bias. UPS Comments at 20. UPS seems to think that it "appears" as if that during Package and Accountable study "carriers were instructed to keep in-receptacle parcels

separate from the regular stream with which they would normally be grouped. Id. This claim is clearly wrong. Carries were not asked to handle their in-receptacle packages in a manner different from the way they normally do. The UPS error arises because it confuses cased packages, which are delivered with cased letters and flats and in receptacle packages which are not. UPS's claim is based upon Dr. Neels' misinterpretation of the Report on City Carrier Street Time. Dr. Neels selectively presents just part of the following quotation from that report. The part quoted by Dr. Neels is underlined:

> Note that cased mail includes both letters and flats, which are cased together and pulled down into one bundle or container. In addition, there are some pieces which may be classified as packages by the DMM, but are handled as flats by city carriers. These pieces are included in cased mail.[Footnote: Recall that the time required for the delivery of packages (both in receptacle and deviation) is included in a separate cost pool.][27]

This means that Dr. Neels excludes the part of the quotation that references cased mail and also excluded the footnote which emphasizes the fact that in receptacle packages are not part of this analysis and are analyzed in a separate cost pool. In sum, his selective quotation makes it look as if the Postal Service was arguing that in receptacle packages are handles as flats by city carriers, when, in fact, the Postal Service made very clear that it is talking about packages that are included in cased mail.

[27] Report on City Carrier Street Time footnote at 85.

**Issue 5: Proposal Thirteen does not address Special Purpose Routes**

On page 5 of its comments, UPS argues that Proposal Thirteen does not address costs arising from Special Purpose Routes, which it mistakenly describes as being "created in recent years to handle increased parcel volumes." In fact, Special Purpose Routes have been around for decades, not recently created, and they do many things besides deliver parcels.

UPS is correct that Proposal Thirteen does not address costs arising from Special Purpose Routes. In addition, Proposal Thirteen does not address costs arising from rural carriers, mail processing, or transportation. That is because they are separate cost-causing activities, with separate cost analysis structures, and are not the subject of the current update. Carriers that perform Special Purpose Route activities clock into Labor Distribution Codes (LDC) 23 or 27. LDC 23 is used for parcel and combination (parcel delivery and collection) routes and LDC 27 is used for dedication collection routes. In contrast, regular letter carriers clock into LDC 22 while on the street.

Moreover, UPS claims to have made "preliminary review" of the cost data for Special Purpose Routes and, of course, it alleges that Postal Service "may be failing to properly attribute the costs of these routes to competitive products." UPS Comments at 5. Yet, UPS fails to provide even a scintilla of evidence that such misattribution occurs. Not surprisingly then, UPS' claim that the Postal Service fails to attribute costs on special purpose routes to competitive products is patently false. The cost pools and respective attribution levels for special purpose routes are currently based on a specific study of

these routes done for Docket No. R97-1.[28] The distribution factors that assign the relevant costs to products are calculated using the ongoing statistical system CCCS-SPR.[29] Contrary to UPS's unsupported assertion, the majority of SPR attributable street costs are distributed to competitive products. As the following table shows, 56 percent of the SPR attributable street costs are assigned to domestic competitive products.

| | SPR Street | Letter Route Street |
|---|---|---|
| FY2013 | ($000) | ($000) |
| Domestic Market Dominant (1) | $ 67,110 | $ 3,993,099 |
| Domestic Compeititive (2) | $ 92,837 | $ 319,022 |
| International (3) | $ 7,021 | $ 31,373 |
| Total Attributable (4)=(1)+(2)+(3) | $ 166,969 | $ 4,343,495 |
| Total Accrued (5) | $ 398,703 | $ 11,643,335 |
| % Attributable Domestic Competitive (6)=(2)/(4) | 56% | 7% |
| % Attributable (7)=(4)/(5) | 42% | 37% |
| | | |
| Source - USPS-FY14-32, CS06&7 | | |
| Costs only include city carrier labor costs | | |

UPS also makes the argument (on page 21) that when "the primary purpose of a route is to deliver parcels, the vast majority of the route cost is caused by and should be attributed to parcels." It then suggests that somehow the costs of Special Purpose Routes is now largely borne by market dominant products. This argument is fundamentally flawed for several reasons. First, "parcels" are a shape, not a product. The goal of a product costing system is to assign costs to products, not shapes, so the UPS proposal faces the impossible task of assigning the institutional costs from Special Purpose Routes among the various products that have a parcel shape. Institutional costs, by definition, are not caused by or associated with any individual products, so an

[28] See Docket No. R97-1, USPS-T-19.

[29] See USPS-FY14-34.

attempt to arbitrarily assign them raises a very difficult question: Should that arbitrary assignment be on relative volumes, relative distances travelled, relative attributable costs, relative attributable costs per piece, or some other metric? The correct answer is none of these approaches should be followed, because institutional costs are not caused by any product and such costs should not be arbitrarily assigned to products.

**Issue 6: Dr. Neels' model should not be adopted by the Commission.**

UPS argues that the Commission should adopt Dr. Neels' non-linear aggregate model because it has the "virtue of simplicity." UPS Comments at 13. That assertion is open to debate, but what is unquestionable is that Dr. Neels model does not have the virtue of accuracy. It is subject to serious mis-specification error, heteroscedasticity, and aggregation error.

In addition, Professor Bradley demonstrates that when even some of these fatal deficiencies are corrected, the estimated aggregate letter and flat variability is 34.5 percent which is quite close the 35.6 percent found in the Proposal Thirteen model. Bradley Analysis at 38. In other words, Dr. Neels' inflated variability does not come from his "simple" model but from his fundamental econometric mistakes.

Among the serious errors in Dr. Neels' model are:

1. Because he is using a specific constant elasticity functional form, Dr. Neels is imposing strong *a priori* restrictions on the cost generating process for city carrier street time, but he provides neither operational nor economic justification for those restrictions.

2. Dr. Neels' nonlinear model suffers from serious mis-specification error. When done correctly, Dr. Neels' own marginal time tests clearly show that it is inappropriate to combine all letter and flat volumes into a single aggregate variable, but that is the approach Dr. Neels follows.

3. Dr. Neels simply assumes that both his aggregated non-parcel volume variable and his parcel volume variable have the same exponential coefficient in the model, but provides no tests or justifications for this restriction. Professor Bradley tests this assumption and demonstrates that is rejected by the data. Bradley Analysis at 35.

4. Dr. Neels did not perform even basic econometric checks on the model. He did not check or correct for heteroscedasticity, multicollinearity, or potentially influential observations, all of which could affect the inferences he draws from the model. This is a real concern as Professor Bradley tests for heteroscedasticity and shows that it exists for Dr. Neels' model. Bradley Analysis at 37.

5. Dr. Neels attempts to estimate his nonlinear model on less than 300 observations. Professor Bradley explains that because nonlinear estimation must iterate around a nonlinear surface to estimate the parameters, a shortage of data can be even more critical than in a linear regression, and the nonlinear model should be estimated on the over 3,000 ZIP Code day observations. Id.

6. Professor Bradley shows that correcting just three of the infirmities of Dr. Neels' model radically changes the results. Bradley Analysis at 38. Including separate aggregate variables for low marginal time and high marginal time volumes, removing the restriction of a single elasticity parameter, and estimating the model on ZIP Code day observations leads to a very different set of variabilities. This demonstrates that Dr. Neels' model is very sensitive to reasonable changes in specification, and is not sufficiently reliable for Commission use.

Because of these many serious flaws, the Neels' model is, without a doubt, completely unacceptable and does not meet the Commission standards for an acceptable econometric analysis.

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Collectively, the comments of Postcom, the Public Representative, and UPS submitted on March 18, 2015 provide no valid basis to oppose adoption of Proposal Thirteen.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorney:

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Eric P. Koetting

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260-1137
(202) 277-6333
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